JCP PARSONS E&C JGC CORPORATION	JCP PROJECT	COMPANY'S JOB CODE	
		COMPANY'S DOC NO	JCP-DS-R-3201
		CONTRACTOR'S JOB CODE	0-3515-20
		CONTRACTOR'S DOC NO	S-032-1351-101
		REVISION	00
		Page	1 of 13

Mechanical Data Sheet
for
Alkylator (R-3201)

Rev.	Issue Date	Purpose/Description of Revision	Prepared	Checked	Approved	Company Approved
00	01 Dec 2007	As Built	L. Lalusin	R. Rocamora/ M. Ishikawa	K. Asakawa	-

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

JCP PARSONS E&C JGC CORPORATION

PRESSURE VESSEL DATA SHEET METRIC UNITS

Company Doc. No.: JCP-DS-R-3201
Contractor Job Code: 0-3515-20
Contractor Doc. No.: S-032-1351-101 Rev.: 00
Item No.: R-3201 Page: 2 of 13

GENERAL

CLIENT	JCP	UNIT	32 - ETHYLBENZENE UNIT	
PROJECT	JCP	SERVICE	ALKYLATOR	
SITE	JUBAIL, SAUDI ARABIA	TYPE	VERTICAL VESSEL	NO. REQ 1 (ONE)
MANUFACTURER		MODEL	SERIAL NO.	

DESIGN CRITERIA (NOTE 16 & 19)

SPECIAL SERVICE/ CATEGORY NONE SEE SPEC

CYCLIC: ☐ YES ■ NO

SPECIFIC GRAVITY 0.657 (T) / 0.634 (B) @ OPERATING TEMPERATURE (NOTE 22)

SIZE: I.D. 4,700 mm LENGTH 48,400 mm T/T CAPACITY: 839.7 cu.m.

PRESSURE (kg/cm2 G)	TOP		BOTTOM		JACKET	
OPERATING	22.3		23.3			
STATIC						
MARGIN						
DESIGN (INT./ EXT.) (NOTE 1)	28.0	FV	28.0	FV		
TEMPERATURE (°C)						
OPERATING	197 / 221		203 /265			
DESIGN (INT./ EXT.) (NOTE 1)	300	300	300	300		

MAWP (MAX. ALLOWABLE WORKING PRESSURE): * Kg/cm2 G @ * °C

LIMITED BY *

MDMT (MINIMUM DESIGN METAL TEMPERATURE): -1 °C

ASME CODE VESSEL: ■ YES ☐ NO ASME CODE SECTION VIII, DIV.: ■ 1 ☐ 2 (Note 2)

FATIGUE ANALYSIS: ☐ YES ☐ NO CODE STAMP REQUIREMENTS ■ YES ☐ NO

MATERIALS

ITEM	MATERIAL (NOTE 10)	C.A. (mm)	MIN.TH.(mm)	JOINT EFF. %	TYPE
TOP HEAD	SA516 GR70	3.0		100	HEMIPSHERICAL
BOTTOM HEAD	SA516 GR70	3.0		100	HEMIPSHERICAL
TRANSITION/ INTERNAL HEAD	SA516 GR70	3.0	NOTE 24	100	2:1 ELLIPTICAL
SHELL	SA516 GR70	3.0		100	
SUPPORT (SKIRT/~~LEG~~/ ~~SADDLES~~)	SA516 GR70 / SA283 GR C				
NOZZLES / MANHOLES	NOTE 8				
INTERNALS (REMOVABLE/ FIXED)	NOTE 9	NOTE 23			
~~DEMISTER~~/ TRAYS	TYPE 410				
LINING	—				
PIPE (INTERNAL)	NOTE 9				
FITTINGS	SA234 GR WPB				
FLANGES	SA350 GR LF2				
GASKETS (NOTE 11)	SPIRAL WOUND				

BOLTING		COATING	SIZE
PRESSURE	SA193 GR B7	☐ CAD ☐ PTFE	
ANCHOR	A307GR C	☐ CAD ☐ PTFE	

NOTES:

*** INDICATES DATA TO BE PROVIDED BY VENDOR (See Ref. No. V-2151-101-A-027).**

NO	DATE	REVISION	BY	APPD	NO	DATE	REVISION	BY	APPD

Form - Rev. 4

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

JCP PARSONS E&C JGC CORPORATION

PRESSURE VESSEL DATA SHEET METRIC UNITS

Company Doc. No.: JCP-DS-R-3201
Contractor Job Code: 0-3515-20
Contractor Doc. No.: S-032-1351-101 Rev.: 00
Item No.: R-3201 Page: 3 of 13

TABLE OF CONNECTIONS

MARK	REQ,	SIZE	CLASS	FACE	TYPE	SERVICE	PROJ. CL TO FACE	REMARKS
1 A-H	8	24	300#	RF	LWN	MANHOLE	2810	W/ DAVIT & BLIND FL'G
1 I-K	3	24	300#	RF	LWN	MANHOLE	2810	W/ DAVIT & BLIND FL'G
2 A,B	2	30	300#	RF	LWN	MANHOLE	2935	W/ DAVIT & BLIND FL'G
7	1	24	300#	RF	LWN	VAPOR OUTLET TO E-3202	SEE DWG.	
10	1	12	300#	RF	LWN	FEED FROM P-3203A/B	2740	W/ LIQUID DISTRIBUTOR
11 A,B	2	8	300#	RF	LWN	FEED FROM R-3203	2710	W/ FLASHING FEED PIPE
12 A-D	4	12	300#	RF	LWN	FEED FROM ETHYLENE	2740	W/ ETHYLENE DIST.
13	1	12	300#	RF	LWN	FEED FROM ETHYLENE	2740	W/ LIQUID DISTRIBUTOR
14	1	24	300#	RF	WN	TO REBOILER P-3201A/B	2740	W/ VORTEX BREAKER
15	1	24	300#	RF	LWN	FROM REBOILER F-3201	2810	DELETED
17	1	10	300#	RF	WN	LIQUID BOTTOM OUTLET	2640	W/ VORTEX BREAKER
18	1	12	300#	RF	LWN	FEED FROM R-3202	2740	W/ LIQUID DISTRIBUTOR
19	1	18	300#	RF	LWN	LIQUID DRAWOFF	2780	W/ INT. PIPE
20	1	18	300#	RF	LWN	LIQUID RETURN	2780	W/ LIQUID DISTRIBUTOR
21	1	20	300#	RF	LWN	VAPOR DRAWOFF	2790	W/ INT. PIPE
22	1	20	300#	RF	LWN	VAPOR RETURN	2800	W/ VAPOR SPARGER
32 A-I	9	2	300#	RF	LWN	SAMPLE CONNECTION	2650	
35 A	1	2	300#	RF	LWN	UTILITY CONNECTION	2650	
35 B,C	2	2	300#	RF	LWN	UTILITY CONNECTION	2650	
38 A,C,D,E	4	2	300#	RF	LWN	PRESSURE DIFF. TAP	2650	
38 B	1	2	300#	RF	LWN	PRESSURE DIFF. TAP	2660	
40 A-I	9	1.5	300#	RF	LWN	TEMPERATURE INDICATOR	2560	

MISCELLANEOUS REQUIREMENTS

NATIONAL BOARD REGISTRATION: ☐ YES ■ NO
WFMT ■ YES ☐ NO OTHER INSPECTION:
PWHT ■ PER CODE ☐ PER SPECIFICATION
HYDROTEST: YES FUTURE FIELD: ☐ YES ■ NO

SUPPORTS COEFFICIENT OF FRICTION: 0.6
SURFACE PREPARATION/ COATING SYSTEMS AS PER SPECIFICATION JCP-00-N0-GS-001(S-000-13A-001) AND NOTE 20.
VENDOR TO PROVIDE CLIPS/ PINS/ SUPPORTS FOR PLATFORM AND LADDER TO ACCESS MAN-WAYS.
EXTERNAL LOADS ATTACHED: ☐ YES ☐ NO LADDER/ PLATFORM/ PIPE GUIDES/ PIPE SUPPORT CLIPS (BY VENDOR) ■ YES ☐ NO

INSULATION AND FIREPROOFING

FIREPROOFING: NOTE 7 THICKNESS 51 mm DENSITY 2300 kg/m3 FIREPROOFING CLIPS ■ YES ☐ NO
INSULATION: THICKNESS SEE PAGE 6 mm DENSITY NOTE 25 kg/m3 INSULATION SUPPORT RINGS ■ YES ☐ NO
INSULATION JACKETING:

INFORMATION FROM VENDOR

HYDROTEST PRESSURE BY VENDOR * kg/cm2G
TEST WEIGHT * kg
TOTAL SHIPPING WEIGH * kg

REFERENCE DRAWINGS AND SPECIFICATIONS

NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
JCP-00-D0-GS-001	Specification for Heavy Wall Carbon Steel	S-000-1351-104	Anchor Bolt Jig and Gauge Plate for Vertical Vessels
(S-000-1351-001)	and Low Alloy Steel Pressure Vessels	JCP-00-N0-GS-001	Project Specification for Painting and Galvanizing
JCP-00-D0-GS-006	Welding & NDE Requirements for Heavy Wall Carbon	(S-000-13A0-001)	
(S-000-1351-006)	and Low Alloy Steel Equipment		See Requisition R-2151-103, Attachment H for Othe
S-000-1351-101	Vessel Design for Wind and Earthqueake Loading		Specifications and Standard Drawings Applicable
S-000-1351-102	Equipment Nozzle Loading		for this item.
S-000-1351-103	Installation and Marking for Pressure Vessels and		
	Heat Exchangers		

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

JCP PARSONS E&C JGC JGC CORPORATION

PRESSURE VESSEL DATA SHEET METRIC UNITS

Company Doc. No.: JCP-DS-R-3201
Contractor Job Code: 0-3515-20
Contractor Doc. No.: S-032-1351-101 Rev.: 00
Item No.: R-3201 Page: 4 of 13

TABLE OF CONNECTIONS (cont.)

MARK	REQ,	SIZE	CLASS	FACE	TYPE	SERVICE	PROJ. CL TO FACE	REMARKS
40 J	1	1.5	300#	RF	LWN	TEMPERATURE INDICATOR	2560	
41	1	3	300#	RF	LWN	TEMPERATURE CONTROL	2670	
45 A,B,C	3	1.5	300#	RF	LWN	LEVEL BRIDLE	2560	
45 D	1	1.5	300#	RF	LWN	LEVEL BRIDLE	2560	
48 A-F	6	1.5	300#	RF	LWN	LEVEL TRANSMITTER	2560	
50 A-D	4	1.5	300#	RF	LWN	LEVEL TRANSMITTER	2560	
SV1-4	4	6	-	-	-	SKIRT VENT	-	
PO1	1	I.D.790xt25	-	-	-	PIPE OPENING	-	
PO2	1	18"SCH.40	-	-	-	PIPE OPENING	-	
AH	1	I.D.600xt25	-	-	-	ACCESS HOLE	-	
91	1	2	300#	RF	LWN	SPARE	2650	W/ BLIND FL`G
92 A,B	2	1.5	300#	RF	LWN	SPARE	2560	W/ BLIND FL`G
93 A,B	2	1.5	300#	RF	LWN	SPARE	2560	W/ BLIND FL`G

MISCELLANEOUS REQUIREMENTS

NATIONAL BOARD REGISTRATION: ☐ YES ☐ NO
WFMT ☐ YES ☐ NO OTHER INSPECTION:
PWHT ☐ PER CODE ☐ PER SPECIFICATION
HYDROTEST: _____ FUTURE FIELD ☐ YES ☐ NO

SUPPORTS COEFFICIENT OF FRICTION:
SURFACE PREPARATION/COATING SYSTEMS SEE ATTACHED COATINGS DATA SHEET
VENDOR TO PROVIDE CLIPS/PINS/SUPPORTS FOR PLATFORM AND LADDER TO ACCESS MAN-WAYS.
EXTERNAL LOADS ATTACHED: ☐ YES ☐ NO ADDER/PLATFORM/PIPE GUIDES/PIPE SUPPORT CLIPS (BY VENDOR ☐ YES ☐ NO

COMPONENTS FURNISHED BY OTHERS

FIREPROOFING: THICKNESS _____ mm DENSITY _____ kg/m3 FIREPROOFING CLIPS ☐ YES ☐ NO
INSULATION: THICKNESS _____ mm DENSITY _____ kg/m3 INSULATION SUPPORT RINGS ☐ YES ☐ NO
INSULATION JACKETING: _____

INFORMATION FROM VENDOR

HYDROTEST PRESSURE BY VENDOR _____ kg/cm2G
TEST WEIGHT _____ kg
TOTAL SHIPPING WEIGH _____ kg

REFERENCE DRAWINGS AND SPECIFICATIONS

NUMBER	DESCRIPTION	NUMBER	DESCRIPTION

Form - Rev. 4

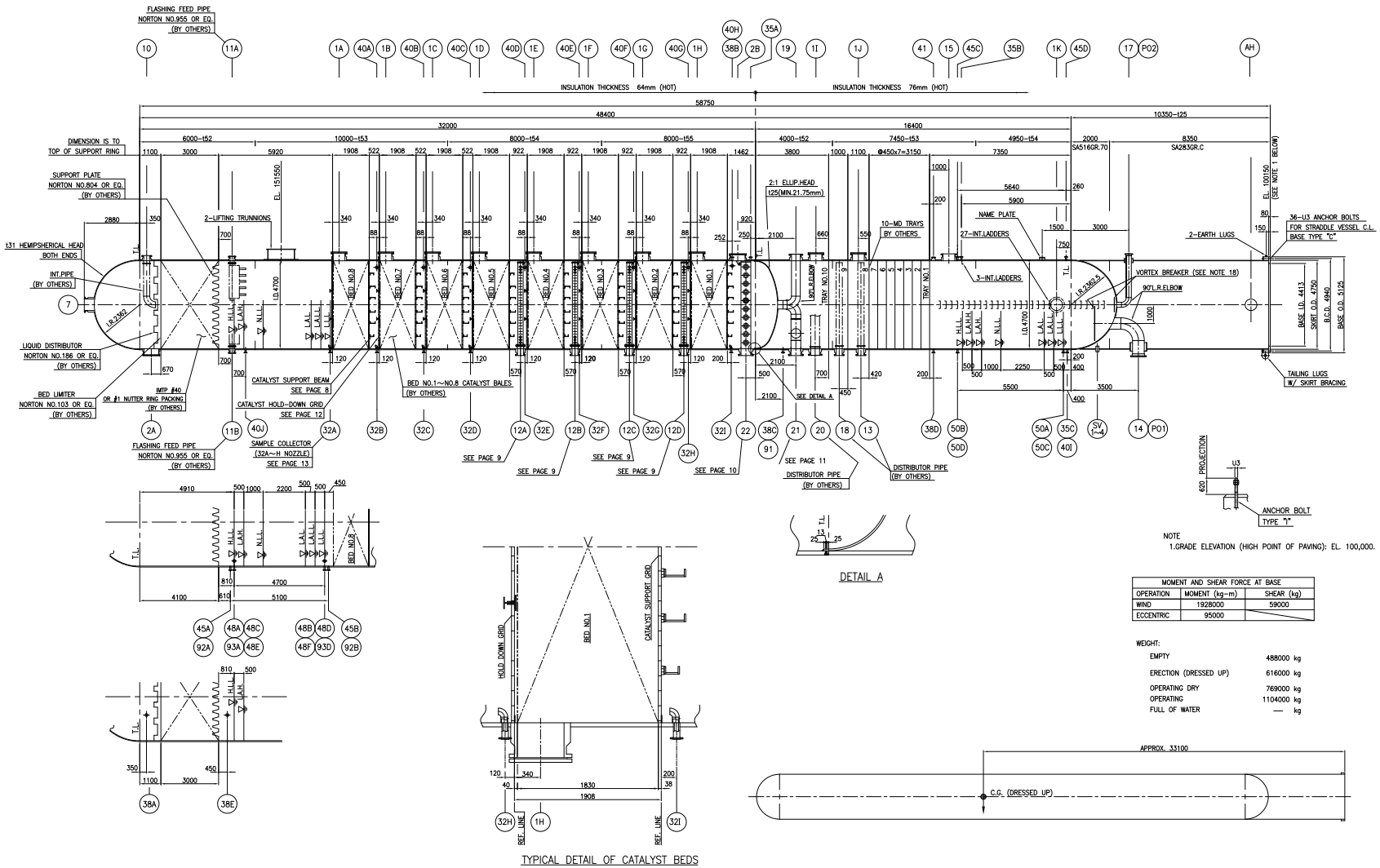
CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

NOTES

1. Design Pressure shown is at the top of the vessel. Static Head shall be added to design the vessel.
   In addition to the design conditions specified, Column shall also be checked and Code Stamped for an external pressure of
   0.52 kg/cm2 G @ 177 deg-Cfor steam-out condition.
2. ASME Section VIII Division 1, 2001 Edition Including 2003 Addenda.
3. =DELETED=
4. Full (100%) Radiography is required for Reactor Shell, Heads and Intermediate Heads.Additional NDE is also required by Project Specification.
5. Reactor to be provided with adequately designed Lifting Trunnions, Tailing Lugs and Bracing arrangement for the skirt at the bottom of Support Ring
   and Tailing Lug location to prevent its distortion during the Reactor loading/ unloading/ Installation sequences.
6. =DELETED=
7. Only for outside of skirt to be fireproofed.
8. SA516 GR70 / SA106 GR B / SA350 GR LF2.
9. SA516 GR70 / SA106 GR B, unless otherwise specified.
10. Materials including skirt shall meet the impact requirements of par.5 of Project Specification JCP-00-D0-GS-001(S-000-1351-001).
11. Hoop: Type304, Filler: Graphite, Inner Ring: Type 304, Outer Ring: C.S.
12. Locate TI's (Nozzles 40A, 40B and 40C) 50mm above top of hold down grid and extend 450mm into vessel.
13. Locate TI's (Nozzles 40D-40G) 50mm above top of hold-down grid and extend 300mm into vessel.
14. Distributor must be able to fit and be installed through a 24" Manhole.
15. Distributor must be able to fit and be installed through a 30" Manhole.
16. Operating temperatures shown are for normal Start-of-Run operation. Vessel must be designed to handle the following purge conditions:
    Purge with nitrogen: 1 kg/cm2 G at 200°C
    Purge with steam: 2 kg/cm2 G at 200°C
17. Catalyst inventory will be a minimum of 222 m3. Catalyst is CDTech Proprietary Catalyst specially packaged in bales.
    Catalyst to be installed in Beds 1 through 7, Bed 8 is left empty for future use.
18. Vortex Breaker (Plate Type) to be designed according to ABB Lummus Global Inc. Standard Drawing LGH SDWG 2703-01.2026.
19. Design basis is for design ethylene feedstock at EOR conditions plus no overdesign.
20. Reactor inside surfaces are to be blasted to near white metal and, provided with N2 Blanketing for protection against corrosion during shipment.
    N2 Blanketing is to be held during construction and, prior to installation of internals.
21. Trial Assembly at Grade is required for Distributors and Spargers prior to installation. Levelness is verified after their installation inside the Reactor.
22. 0.657 (T) / 0.857 (B) shall be used for design.
23. The following total corrosion allowance shall be applied to all internals made of Carbon Steel.
    1) 1.5 times the shell corrosion allowance for parts welded to vessel.
    2) same corrosion allowance as that of shall for major beams.
    3) 0.8 mm for all other removable internals.
24. Thickness of intermediate head specified in mechanical data sheet (Page 6) is minimum and shall be verified by vessel vendor considering the liquid static head.
25. Density of insulation for shell : Top=228kg/m3,Bt`m=214kg/m3 for heads :Top=318kg/m3,Bt`m=304kg/m3.
26. All dimensions are in millimeters (mm), unless otherwise noted, nozzle size are in inches.

ADDITIONAL REMARKS OR SKETCH

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.


FLASHING FEED PIPE NORTON NO.955 OR EQ. (BY OTHERS)
INSULATION THICKNESS 64mm (HOT)
INSULATION THICKNESS 76mm (HOT)
58750
48400
32000
16400
10350-t25
DIMENSION IS TO TOP OF SUPPORT RING
SUPPORT PLATE NORTON NO.804 OR EQ. (BY OTHERS)
2-LIFTING TRUNNIONS
2:1 ELLIP.HEAD t25(MIN.21.75mm)
10-MD TRAYS BY OTHERS
NAME PLATE
27-INT.LADDERS
3-INT.LADDERS
2-EARTH LUGS
36-U3 ANCHOR BOLTS FOR STRADDLE VESSEL C.L. BASE TYPE "C"
t31 HEMIPSHERICAL HEAD BOTH ENDS
INT.PIPE (BY OTHERS)
LIQUID DISTRIBUTOR NORTON NO.186 OR EQ. (BY OTHERS)
BED LIMITER NORTON NO.103 OR EQ. (BY OTHERS)
IMTP #40 OR #1 NUTTER RING PACKING (BY OTHERS)
CATALYST SUPPORT BEAM SEE PAGE 8
CATALYST HOLD-DOWN GRID SEE PAGE 12
BED NO.1~NO.8 CATALYST BALES (BY OTHERS)
SAMPLE COLLECTOR (32A~H NOZZLE) SEE PAGE 13
VORTEX BREAKER (SEE NOTE 18)
90°L.R.ELBOW
TAILING LUGS W/ SKIRT BRACING
SEE DETAIL A
SEE PAGE 9
SEE PAGE 10
SEE PAGE 11
DISTRIBUTOR PIPE (BY OTHERS)
ANCHOR BOLT TYPE "1"
DETAIL A
TYPICAL DETAIL OF CATALYST BEDS
HOLD DOWN GRID
CATALYST SUPPORT GRID
C.G. (DRESSED UP)
APPROX. 33100

NOTE
1.GRADE ELEVATION (HIGH POINT OF PAVING): EL. 100,000.

MOMENT AND SHEAR FORCE AT BASE		
OPERATION	MOMENT (kg-m)	SHEAR (kg)
WIND	1928000	59000
ECCENTRIC	95000	

WEIGHT:

EMPTY	488000 kg
ERECTION (DRESSED UP)	616000 kg
OPERATING DRY	769000 kg
OPERATING	1104000 kg
FULL OF WATER	— kg

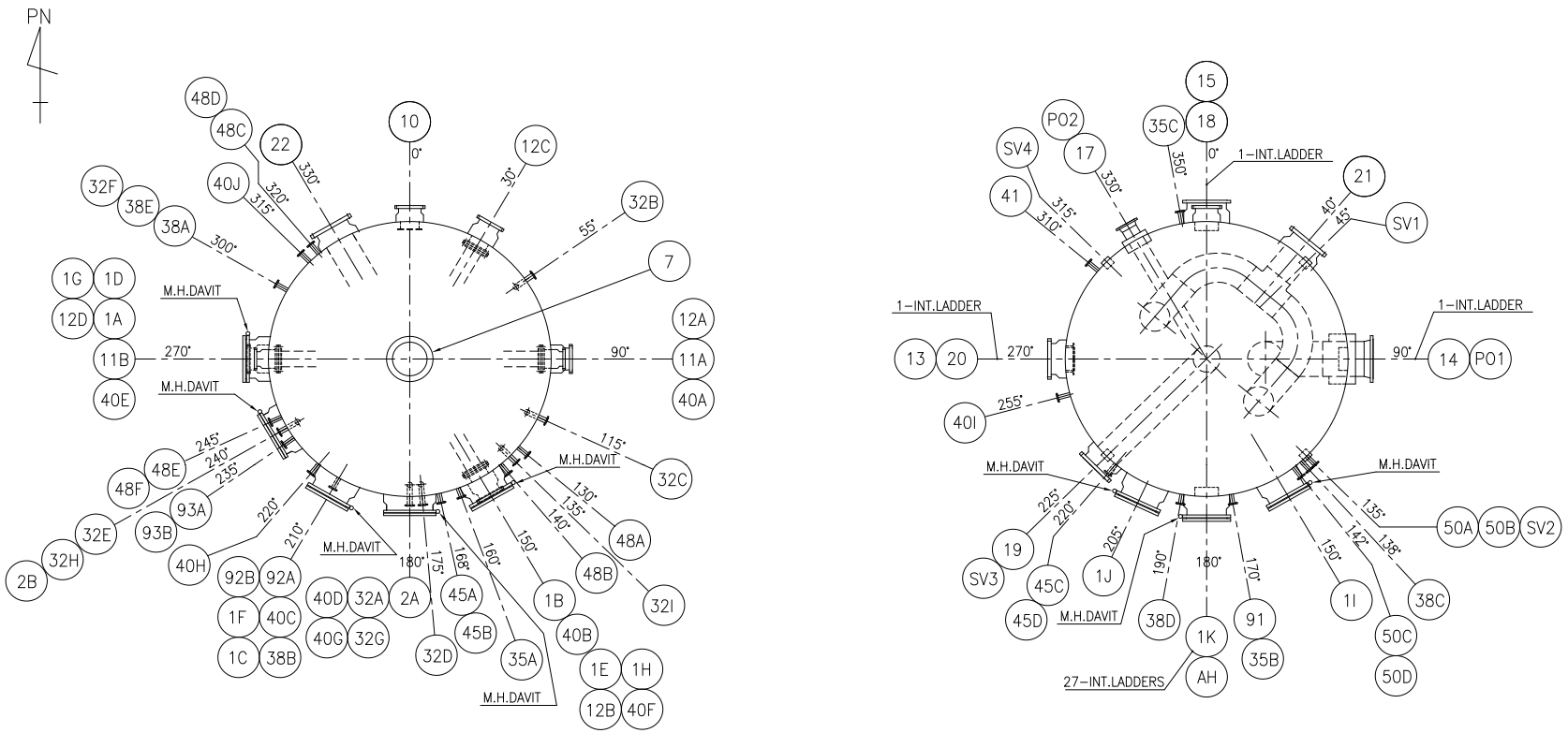
JCP PARSONS E&C JGC CORPORATION

PRESSURE VESSEL DATA SHEET METRIC UNITS

Company Doc. No.: JCP-DS-R-3201
Contractor Job Cod: 0-3515-20
Contractor Doc. No. S-032-1351-101 00
Item No: R-3201 Page 6 of 13

Form - Rev. 4

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.



NOZZLE ORIENTATION

LIFTING TRUNNION : 30° & 210°
TAILING LUG : 300°
NAME PLATE : 180°
EARTH LUG : 90° & 270°

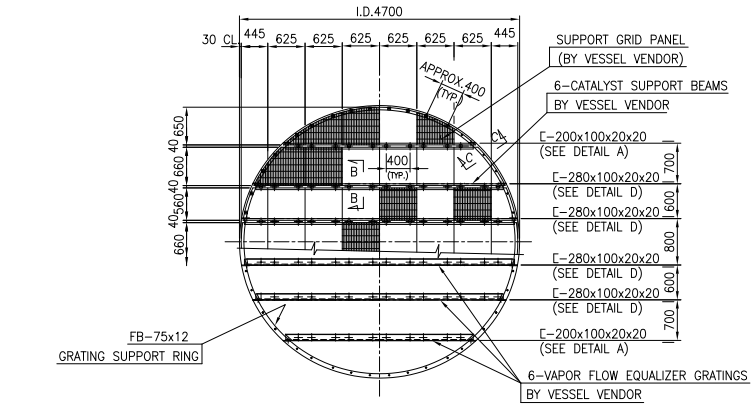
JCP PARSONS E&C JGC CORPORATION

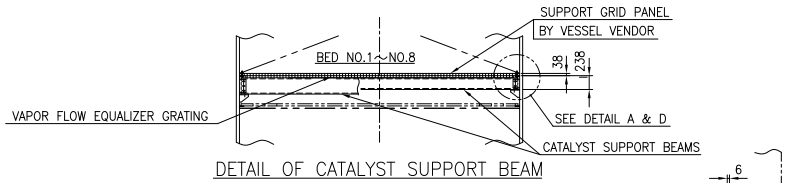
PRESSURE VESSEL
DATA SHEET
METRIC UNITS

Company Doc. No.: JCP-DS-R-3201
Contractor Job Cod: 0-3515-20
Contractor Doc. No. S-032-1351-101 00
Item No R-3201 Page 7 of 13

Form - Rev. 4

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.





DETAIL OF CATALYST SUPPORT BEAM

NOTES:

1) THE SUPPORT GRATING AND BEAMS MUST BE CAPABLE OF SUPPORTING 4 TIMES THE WEIGHT OF THE CATALYST BALES (BULK DENSITY 575 kg/m^3) TO ACCOUNT FOR BENZENE HOLD UP IN THE CATALYST.

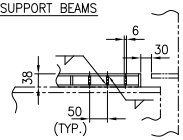
2) –

3) MATERIAL OF CONSTRUCTION
BAR: SA36
BOLTING: TYPE304

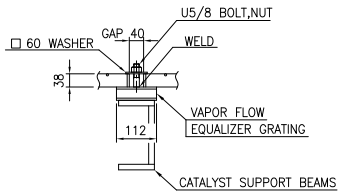
4) VESSEL VENDOR IS TO SELECT THE SUPPORT GRID.
THE MAIN WEBS OF THE SUPPORT GRID ARE TO BE ON 50mm OR LESS CENTERS.
THE SUPPORT GRID IS TO BE AT LEAST 80% OPEN AREA, EXCLUDING AREA BLOCKED BY THE BEAMS AND SUPPORT RING.

5) THE CATALYST SUPPORT GRATING PANELS ARE TO FIT THROUGH A 30 INCH MANHOLE.

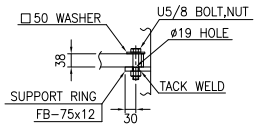
6) ALL DIMENSIONS SHOWN IN THIS SHEET SHALL BE VERIFIED BY VESSEL VENDOR.



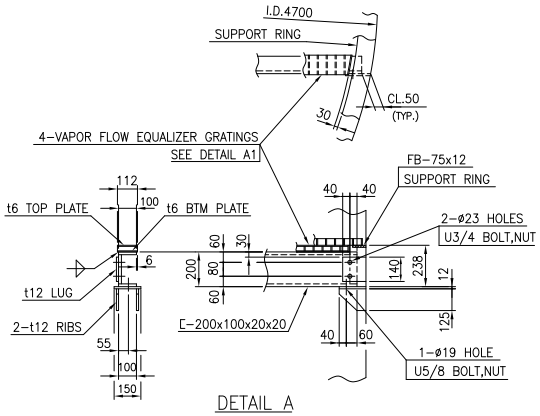
DETAIL A1



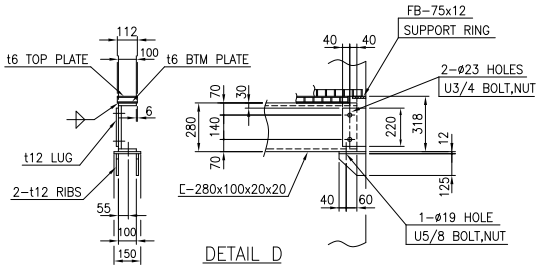
VIEW B-B



VIEW C-C



DETAIL A



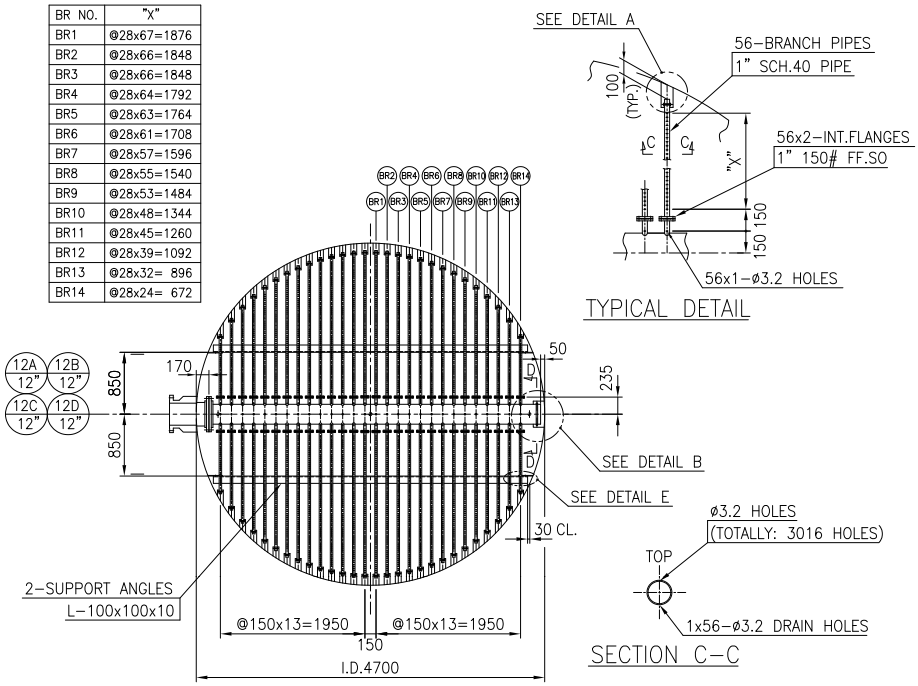
DETAIL D

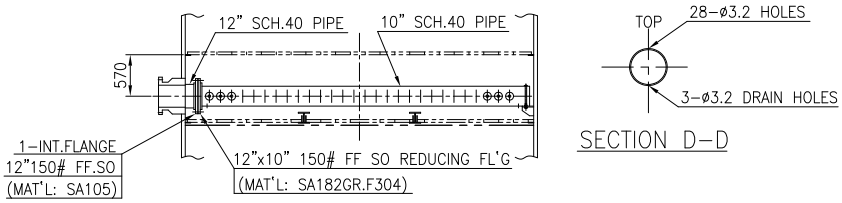
JCP PARSONS E&C JGC CORPORATION	Company Doc. No.: JCP-DS-R-3201
PRESSURE VESSEL DATA SHEET METRIC UNITS	Contractor Job Cod: 0-3515-20
	Contractor Doc. No. S-032-1351-101 00
	Item No R-3201 Page 8 of 13

Form - Rev. 4

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

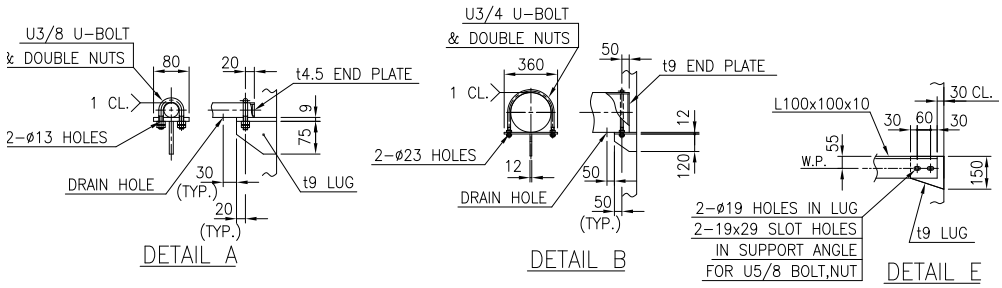
BR NO.	"X"
BR1	@28x67=1876
BR2	@28x66=1848
BR3	@28x66=1848
BR4	@28x64=1792
BR5	@28x63=1764
BR6	@28x61=1708
BR7	@28x57=1596
BR8	@28x55=1540
BR9	@28x53=1484
BR10	@28x48=1344
BR11	@28x45=1260
BR12	@28x39=1092
BR13	@28x32= 896
BR14	@28x24= 672





DETAIL OF DISTRIBUTOR FOR 12 NOZZLE

(SEE NOTE 14 ON PAGE 5)



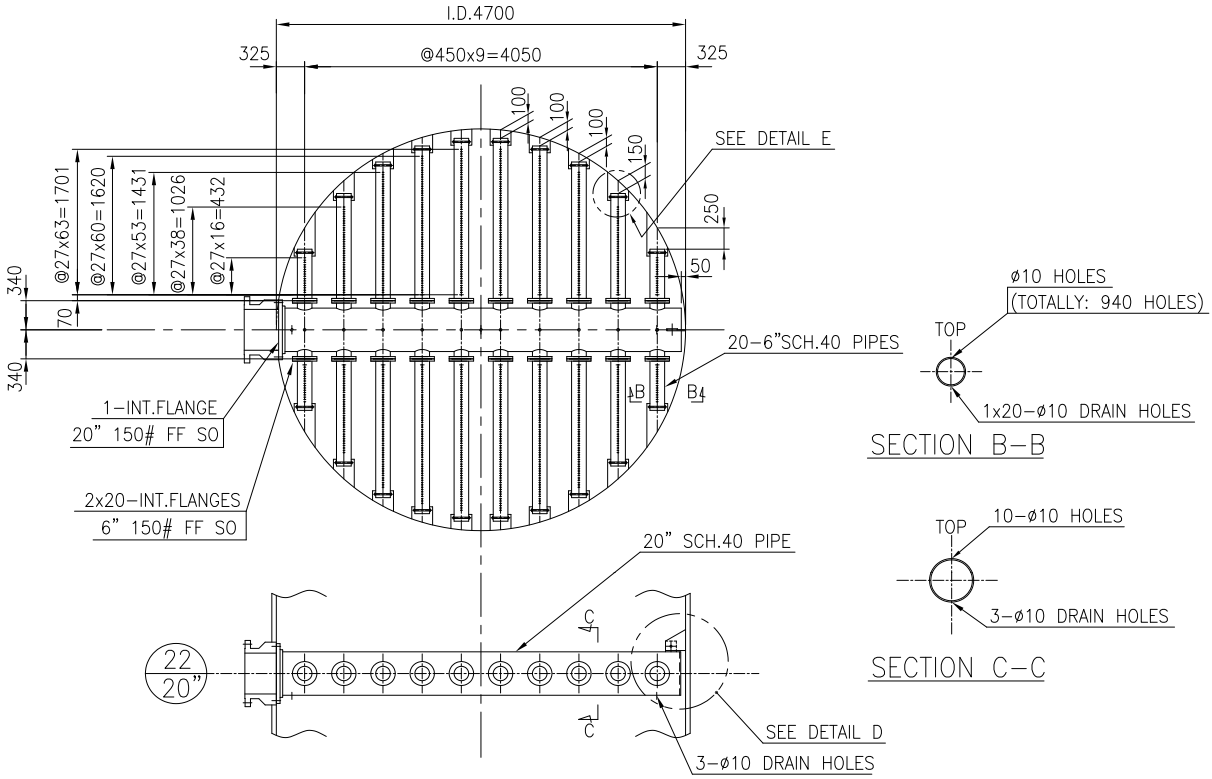
MATERIAL :

1) INTERNAL FLANGE , PIPE AND END PLATE:
SA182GR.F304, SA312GR.304 AND SA240GR.304

2) INTERNAL BOLT, NUT INCL. U-BOLT:
TYPE 410 SHALL BE USED AS A MINIMUM. HOWEVER, IF WELDING CONSTRUCTION (INCL. TACK WELD) IS APPLIED, TYPE405 OR 410S SHALL BE USED.

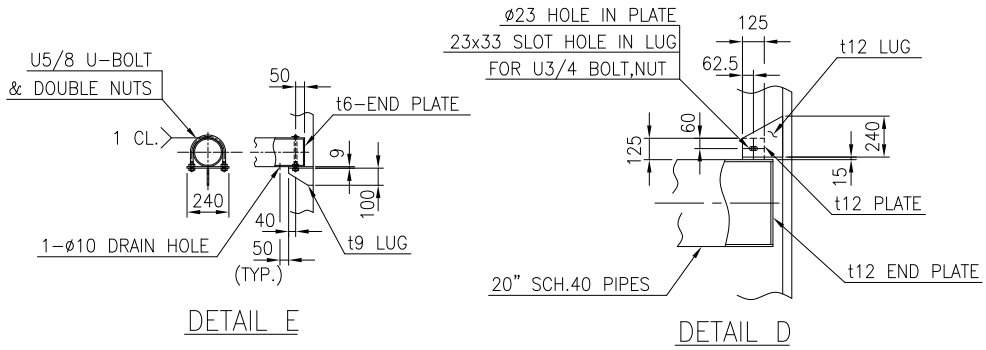
3) INTERNAL GASKET: NON-ASBESTOS (GASKET MATERIAL TO BE SUITABLE FOR BENZENE SERVICE.)

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.



DETAIL OF DISTRIBUTOR FOR 22 NOZZLE

(SEE NOTE 15 ON PAGE 5)



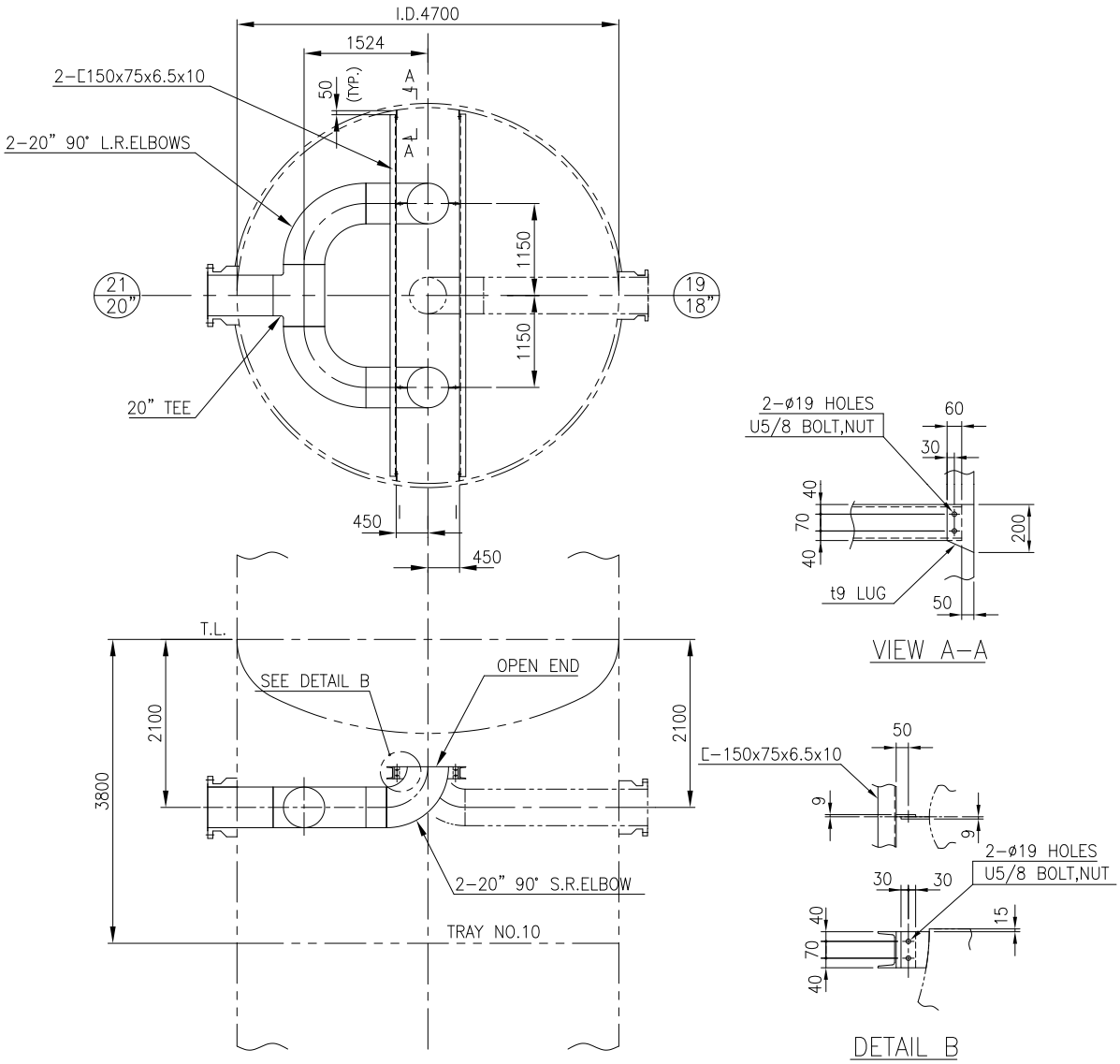
DETAIL E

DETAIL D

MATERIAL :

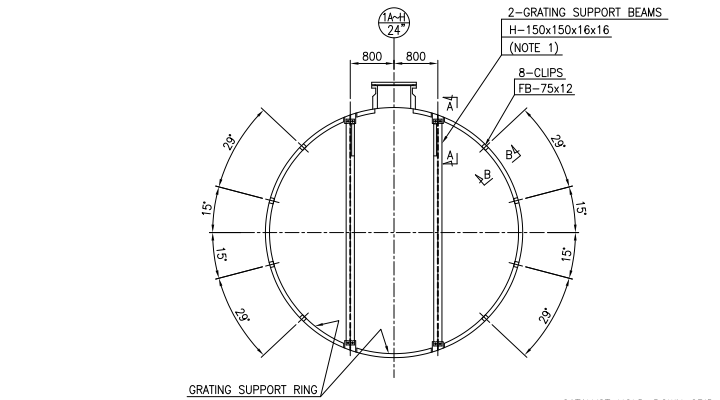
1) INTERNAL FLANGE : SA105
2) INTERNAL BOLT, NUT INCL. U–BOLT:
   TYPE 410 SHALL BE USED AS A MINIMUM. HOWEVER, IF WELDING CONSTRUCTION (INCL. TACK WELD) IS APPLIED. TYPE405 OR 410S SHALL BE USED.
3) INTERNAL GASKET: NON–ASBESTOS (GASKET MATERIAL TO BE SUITABLE FOR BENZENE SERVICE.)

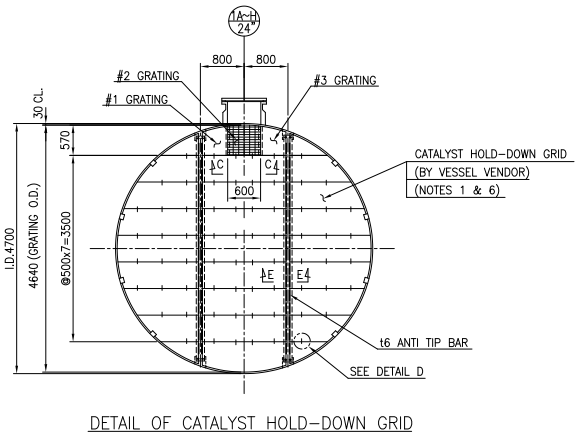
CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.

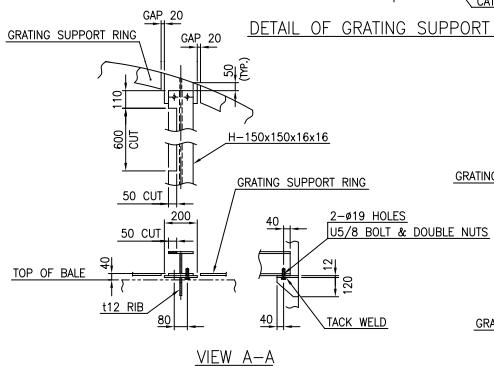


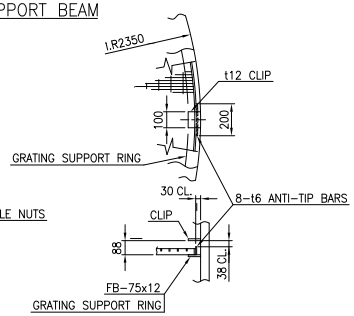
DETAIL OF MID REFLUX FOR 21 NOZZLE

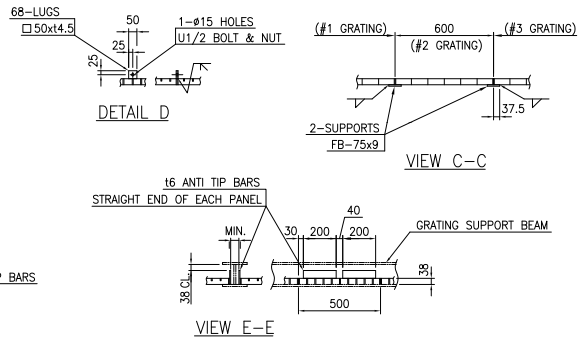
CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.











NOTES:

1) CATALYST HOLD-DOWN GRIDS AND SUPPORT BEAMS ARE TO BE ROTATED 60° FROM THOSE OF THE BED BELOW TO ENSURE GOOD DISTRIBUTION.

2) MATERIAL OF CONSTRUCTION
BAR: SA36
BOLTING: TYPE304

3) VESSEL VENDOR IS TO SELECT THE APPROPRIATE WELDED BAR GRATING FOR THE CATALYST HOLD-DOWN GRID. THE BEARING BAR OF THE GRATING ARE TO BE ON 50mm OR LESS CENTERS. THE CROSS BAR OF THE GRATING ARE TO BE ON 100mm OR LESS CENTERS. THE HOLD-DOWN GRID IS TO BE AT LEAST 80% OPEN AREA, EXCLUDING AREA BLOCKED BY THE BEAMS AND SUPPORT RING. THE CONTOURED ENDS OF EACH PANEL TO BE FULLY BANDED.

4) THE GRATING PANELS ARE TO FIT THROUGH A 24 INCH MANHOLE.

5) ALL DIMENSIONS SPECIFIED IN THIS SHEET SHALL BE VERIFIED BY VESSEL VENDOR.

6) GRATING BEARING BARS TO BE INSTALLED PERPENDICULAR TO SUPPORT BEAM.

7) THE HOLD-DOWN GRID, ITS SUPPORT RING AND ITS BEAMS MUST BE ABLE TO WITHSTAND FORCES IN THE DOWNWARD DIRECTION OF 300kg/m^2 AS MAINTENANCE LOAD.

8) DESIGN LOADING OF THE UPLIFT FORCE OF HOLD-DOWN GRID IS 0.08 kg/cm2

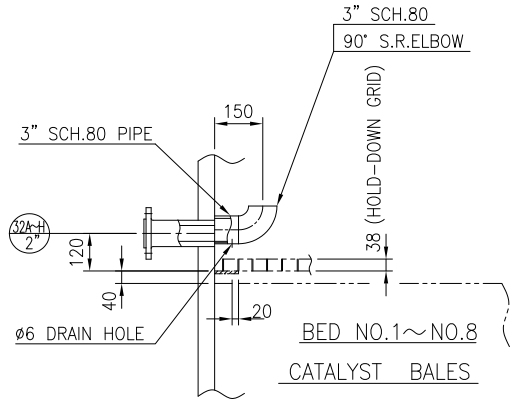
JCP PARSONS E&C JGC CORPORATION

PRESSURE VESSEL DATA SHEET METRIC UNITS

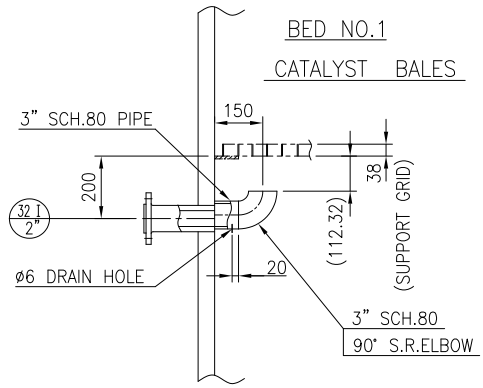
Company Doc. No.: JCP-DS-R-3201
Contractor Job Cod: 0-3515-20
Contractor Doc. No. S-032-1351-101 00
Item No R-3201 Page 12 of 13

Form - Rev. 4

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.



DETAIL OF 32A~H NOZZLES



DETAIL OF 32I NOZZLE

NOTE:

1) INSIDE LOW POINT OF 2" SAMPLE NOZZLE (32 A~I) IS TO BE ALIGNED WITH INSIDE LOW POINT OF 3" ELBOW.

CONFIDENTIAL INFORMATION
Reproduction and use prohibited except in accordance with Jubail Chevron Phillips Company's written permission.